

**REMARKS/ARGUMENTS**

Claims 1-15 and 18-40 remain pending with claims 1-13, 32 and 33 being withdrawn pursuant to a restriction requirement. Claims 14 and 34 have been amended. New claims 38-40 have been added. No new matter has been added by the claim amendments or the new claims.

Claims 14, 15, 18-26, 28-31 and 34-37 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Van Dam, et al. (US 2003/0008411 A1) in view of Quake, et al. (US 2002/0037499 A1).

Claim 27 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Van Dam, et al. in view of Quake, et al. as applied to claims 14, 15, 18-26, 28-31 and 34-37, and further in view of Raillard, et al. (US 2002/0102577 A1).

***Claim Rejections - 35 U.S.C. § 103***

Independent claims 14 and 34 are drawn to methods of conducting a binding assay. The methods includes, among other elements, forming a plurality of looped flow channels. Each looped sample flow channel comprises a closed loop, and the sample solution is recirculated within the closed loop.

As recited in amended claim 14, the looped sample flow channels are formed using a plurality of sets of loop forming control valves. Each set has a first valve operatively disposed with respect to an inlet of one of each of the first and/or the second flow channels and a second valve operatively disposed with respect to an outlet of one of each of the first and/or second flow channels. Applicants respectfully submit that the cited references, either considered alone or in combination, do not teach or suggest at least these elements in the manner claimed.

The Examiner acknowledges that Van Dam "does not disclose the step of manipulating the valves to form a closed loop." (Office action at page 3). To make up for this deficiency in Van Dam, the Examiner relies on Quake, stating that "it would have been obvious to one of ordinary skill in the art to manipulate the valves of the Van Dam et al. device to form a closed loop of channels during the hybridization step to ensure that the sample and the reagents properly hybridize." (Office action at page 4).

The Examiner refers to paragraph [0190] of Van Dame et al., which discusses how "more complicated reaction sequences can be achieved by having a plurality of valves at the waste side which is designed to redirect the flow from selected channels back into other channels flowing in the reverse direction." Applicants note that this discussion in Van Dam et al., only mentions potential valves at the waste side. Thus, at best Van Dam et al. only provides motivation for a single pass serpentine flow from one inlet to one outlet.

Applicants are unable to determine how one would "manipulate the valves of the Van Dam et al. device to form a closed loop of channels" as suggested by the Examiner. Neither loop forming control valves nor recirculating pumps are illustrated in FIG. 12A of Van Dam et al. Although both references discuss valves and pumps, the mere suggestion of redirecting flow using valves does not provide motivation to perform the claimed method. Rather, the combination alleged by the Examiner appears to be based on impermissible hindsight. Therefore, for at least these reasons, claims 14 and 34 are in condition for allowance.

Claims 15, 18-31, and 38-39 which depend from claim 14, are in condition for allowance, for at least the reasons discussed in relation to claim 14, as well as for the additional elements they recite.

Claims 35-37 and 40, which depend from claim 34, are in condition for allowance, for at least the reasons discussed in relation to claim 34, as well as for the additional elements they recite.

**CONCLUSION**

In view of the foregoing, Applicants believe all claims now pending in this Application are in condition for allowance. The issuance of a formal Notice of Allowance at an early date is respectfully requested.

If the Examiner believes a telephone conference would expedite prosecution of this application, please telephone the undersigned at 650-326-2400.

Respectfully submitted,

/Craig C. Largent/

Craig C. Largent  
Reg. No. 56,400

TOWNSEND and TOWNSEND and CREW LLP  
Two Embarcadero Center, Eighth Floor  
San Francisco, California 94111-3834  
Tel: 650-326-2400 / Fax: 415-576-0300  
CCL:lsb:ka  
61747331 v1